STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands
Honolulu, Hawaii

File No. CDUA HA-3118

March 23, 2007

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

REGARDING: Modifications to Conservation District Use Permit (CDUP) No. HA-3118 Related to Offshore Aquaculture

APPLICANT: Kona Blue Water Farms, LLC, P.O. Box 525, Holualoa, Hawaii, 96725

LANDOWNER: State of Hawaii, Department of Land and Natural Resources
LESEEE: Kona Blue Water Farms, LLC General Lease No. 5721

LOCATION: In Offshore Waters off of the Natural Energy Laboratory of Hawaii Authority (NELHA), Ulualoha Point, North Kona, Hawaii

TMK: State Marine Waters

AREA OF USE: 90 Acres

SUBZONE: Resource

DESCRIPTION OF AREA AND CURRENT USE:

The applicant, Kona Blue Water Farms, LLC (KBWF), operates a 90-acre open ocean fish farm, 2,600 feet offshore off of the Natural Energy Laboratory of Hawaii Authority (NELHA), located at Ulualoha Point, North Kona, Island of Hawaii, in State marine waters, 200 to 220 feet deep, over soft sand substrate. The Board of Land and Natural Resources (BLNR) originally approved the project on August 8, 2003 under Conservation District Use Permit HA-3118 (**Exhibit 1**). The application was processed and approved pursuant to Chapter 190D, Hawaii Revised Statutes relating to Ocean and Submerged Lands Leasing.

The project's location runs parallel to the coastline. The site is rectangular shaped (sides are 2,000 feet by 1,800 feet, the long axis running North to South). The lines of the rectangular are defined by the following longitude and latitude coordinates: 1) 19 deg - 44' - .716 N and 156 deg - 03' - .589 W; 2) 19 deg - 44' - .420 N and 156 deg - 03' - .589 W; 3) 19 deg - 44' - .420 N and 156 deg - 03' - 884 W; and 4) 19 deg. - 44' - .716 N and156 deg- 03' - .884 W. The depth at the

center of the site is approximately 210 feet deep. The project site is located in the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) **(Exhibits 2, 3 & 4)**.

The approved management plan originally called for six (6) submersible sea cages and two (2) surface net pens **(Exhibit 5)**. It is staff's understanding that there are currently five (5) submersible sea cages on site. The two surface net pens are currently not is use, but remain moored on site.

PROJECT MODIFICATIONS/ISSUES SINCE ORIGINAL PROJECT APPROVAL:

Skin Flukes

- On October 31, 2005 KBWF informed the Office of Conservation and Coastal Lands (OCCL) that they found an increase in "skin flukes" among their fish[1]. Due to the presence of these pests and their potential to increase, KBWF sought OCCL's approval to treat the fish in a hydrogen peroxide bath in order to kill the parasites.
- On November 1, 2005, OCCL sought the advice of the Division of Aquatic Resources (DAR) regarding the actions proposed by KBWF. DAR responded the following day with several recommendations including a request that KBWF consult with the Department of Agriculture, Aquaculture Development Program disease specialist.
- On November 4, 2005 a Veterinary Specialist with the Aquaculture Development Program wrote to OCCL and provided specific recommendations to OCCL to eliminate the flukes [parasites] using a hydrogen peroxide bath. This letter was forwarded to KBWF.
- On November 28, 2005, KBWF reported on their two attempts to treat fish infested with skin flukes. According to the report, treatment of the fish in the surface cage was successful, but treatment in the submerged cage was not.[2] Staff has not received any additional written reports regarding additional skin fluke problems or peroxide applications.
- On February 17 and 21, 2006 KBWF informed OCCL that they intended to treat one of their cages with another hydrogen peroxide bath to address the skin fluke problem.

Mooring Lines

- On October 31, 2005 KBWF informed OCCL of the need to install more vertical mooring lines and concrete weights underneath the mooring grid to stabilize the overall mooring system. KBWF explained that the lines were needed due to the stronger current encountered in the deeper water[3] **(Exhibit 6)**. KBWF also requested that they install warning buoys and flashing lights, and maker floats at each of the four corners of the

[1] Conditions 15 & 17 of the CDUP require KBWF to notify the Department of a disease outbreak and to sample fish periodically for parasites not less than once per year.
[2] In order to apply a hydrogen peroxide treatment the population of fish needs to be enclosed with a tarp. The tarp deployment for the submersible cage was apparently unsuccessful and thus the hydrogen peroxide application was ineffective.
[3] The farm site was moved 600 feet seaward in order to address public concerns over the original farm location.

farm surface grid, which would provide a reference point for fishermen to avoid entanglement with the grid lines.

- This request was distributed for agency comment on November 2, 2005.
- On November 28, 2005, the Division of Aquatic Resources (DAR) commented on KBWF's proposed changes. DAR was concerned over possible colonization of the additional line and features by invasive algae, sponges, etc., and requested an expanded and robust monitoring system be in place to manage such problems should they arise. DAR has repeatedly asked for monitoring of the seafloor under the cages and most recently recommended the use of 'drop cameras", in lieu of divers, due to the diver safety concerns expressed by KBWF[4].
- On December 6, 2005, KBWF responded to DAR's concerns. In summary, KBWF stated that they had not intended to increase their monitoring plan, as they had already in place an extensive water quality-monitoring plan, and a monitoring program on the adjacent coral reef (a half mile in shore). KBWF believed that the farm, and the vertical lines and mooring blocks would not pose any significant threat to the environment due to its location offshore.
- On February 13, 2006, the OCCL issued a Site Plan Approval for these improvements (**Exhibit 7**).

Removal of Surface Cages/Replacement with two Submerged Cages and Feeding Barge

- On October 22, 2006 KBWF informed OCCL that they intended to remove their two (2) surface cages and replace each one with submersible sea cages. In addition, they mentioned the possibility of adding a permanent feeding barge to the offshore system. The feeding barge would allow feeding at optimal times and amounts during the day, and on days when it is not possible to reach the farm, use of more sustainable feeds, improved worker safety, and improved monitoring of the cage site (**Exhibit 8**).

Additional Anchors/Mooring lines

- On November 29, 2006, KBWF submitted a request for four supplemental anchors with four attached mooring lines to supplemental the holding power of the existing two most central mooring lines (**Exhibit 9**). OCCL received comments from DAR on the proposed action. DAR raised similar concerns as before and reiterated that a complete and thorough assessment of all of their concerns be concluded prior to further modifications.
- On January 5, 2007, OCCL approved KBWF's request (**Exhibit 10**).

Modifications to KBWF Management Plan

- On February 23, 2007 OCCL received a document from KBWF (Amended Management Plan - amendments underlined/deletions are stricken) (**Exhibit 11**). The management plan has been updated to reflect, "as built" project components. In addition, the plan

[4] KBWF has stated that they are not able to monitor or mitigate potential invasive species growth on the anchors or conduct benthic surveys. The reason is that the seafloor is over 200 feet deep and too dangerous 'for divers to operate in. However, staff recently learned that KBWF has been conducting some benthic monitoring (grab samples) under a requirement of their DOH permit.

includes several variations from the original plan that staff believes warrant more detailed discussion below.

- The original plan called for the keystone species to be kahala and mahimahi. Kona Kampachi (Kahala) is currently the only fish being produced. The amended plan states that they are exploring the market potential and hatchery technology for mahimahi, opakapaka and Native Hawaiian giant grouper[5].
- The plan removes any reference to surface net pens.
- Provides for the installation of a semi-permanent security/feed barge to be moored on site.
- Adds two additional submersible net pens on a supplemental grid lying to the East of the main grid. This supplemental grid will include the mooring point for the feed/security vessel (**see Exhibit 8**).
- Includes a request that any changes to the mooring grid be carried out expeditiously.
- Provides for various modifications in the general operations of the farm, such as the harvesting of younger fish.
- Provides for a total production in fish of up to 600 tonnes compared to 360 tonnes in the original plan.

DISCUSSION:

Staff has solicited comments from the Divisions of Aquatic Resources, Boating and Ocean Recreation, and Land Division. Staff received e-mail comments from the Land Division who indicated that Kona Blue Water Farms, LLC has a lease that does not limit the number of fish cages, submerged or surface, or other equipment necessary in conducting its fish farm operations within the demised premises. Land Division has no objections to the addition of a surface feed barge onto the lease premises, provided the barge and its moorings lines, guy wires and anchors do not extend beyond the leased premises, which is comprised of a 90-acre portions of State submerged land, a corresponding 90-acre portion of surface water and the water column in between. Also, the feed barge must comply with the U.S. Coast Guard safety regulation for navigable waters.

The Division of Aquatic Resources (DAR) continues to have concerns about the changes in the project and the manner in which these changes proceeded in a piecemeal fashion. They are concerned over the potential effects of the project on the potential dispersal of invasive marine species, coral reef communities and the benthic environment beneath the farm. DAR is concerned about the many lines, anchors and moorings at the site along with stated concerns regarding nutrification of the benthos caused by excess feed, feces and dislodged marine life caused by the regular in-water cleaning of the nets through hand-brushing or high pressure saltwater washed.

Staff has included a discussion of the following conditions that staff feels are relevant to this matter:

[5] The Division of Aquatic Resources (DAR) has concerns about the use of giant grouper brood stock originating form elsewhere in the world, in Hawaii. Staff spoke with KBWF about this issue. KBWF noted that they cannot find any more native giant grouper in Hawaii in the wild for brood stock.

15. The applicant shall forward details of all monitoring efforts to the DLNR and water quality results to the Department of Health, two weeks after receipt of the results. The department shall be immediately notified of the failure of the mooring system, a disease outbreak, theft or vandalism;

KBWF noted that they provided all water quality monitoring data to Clean Water Branch, as required under their NPDES permit. They also placed on their web site (www.kona-blue.com Community Relations section) copies of all quarterly and monthly water quality monitoring data from inception to July 31st, 2006. They indicate that the data were also forwarded to DAR at the Kona Office. KBWF also noted that they have notified OCCL whenever they have had concerns with the mooring system (such as the steel grid buoys rising to the surface in strong currents), fish health (such as the skin fluke issue) and theft.

OCCL staff has no evidence that water quality monitoring information was submitted to the Department. KBFW has contacted OCCL when there have been problems with the mooring system, disease (skin flukes), and vandalism.

16. The applicants, at their own expense, shall develop and conduct a water quality, benthic and coral reef monitoring protocol approved by the Chairperson. Such environmental monitoring shall continue indefinitely as specified by the Chairperson unless authorization for its suspension or reinstatement is specified by the Chairperson;

KBWFs noted that water quality and benthic monitoring are covered under their NPDES. According to KBWF, the CWB insisted on the benthic sampling, despite the fact that OCCL had agreed (and our Final EA had clearly stated) that relocating the site out to water over 200 ft deep would make this very challenging, from an equipment and safety perspective, and less significant from an impacts perspective. According to KBWF, it took some time to determine the best sampling protocol, given that they could not use divers, and there would be a risk to cameras used in transects. KBWF eventually reached an agreement with CWB and EPA. They now initiated a grab sampling program, and the first of these reports will be available in the next few weeks. They offered to make any or all of these data and reports available to OCCL. According to KBWF, the coral reef monitoring program is being conducted by DAR, as the site that that KBWF originally surveyed as part of their EA. KBWF notes that the site has now been incorporated into the DLNR WHAP reef-monitoring program – it uses exactly the same protocols, and this provides much greater statistical rigor.

OCCL staff notes that condition sixteen (16) specifically states that KBWF stall conduct a water quality, benthic and coral reef monitoring protocol approved by the Chairperson. Staff has no record of any of this type of monitoring being approved by the Chairperson or any such information being submitted to the Department. KBWF recently submitted (3/4/07) a benthic monitoring program protocol conditionally approved by the Department of Health. Staff referred this information to the Division of Aquatic Resources for their review. With respect to

coral reef monitoring, staff checked with the Division of Aquatic Resources (DAR). DAR indicated that they are monitoring a reef site proximate to the KBWF operation, but they do not indicate whether or not KBWF should be doing their own monitoring of the site.

18. The applicant shall submit all research, data, results or other publications, papers or reports concerning the fish farm and its surrounding environment to the department and shall use objective, third party experts to collect water quality samples. The data shall be analyzed by independent agencies or laboratories. The applicant shall place copies of all Federal or State-mandated environmental quality reports at local repositories, such as the DLNR, Division of Aquatic Resources office at Honokohau, so that local residence may review the data. The applicant shall provide reasonable access to Federal, State and County officials for monitoring and oversight purposes. The applicant need not submit information related to farm operations, which is not necessary to evaluate the quality of the environment at the submerged fish farm and surrounding areas.

According to KBWF, they have been using AECOS laboratories for all water quality monitoring. They have provided the DAR Kona office with the same data that they have on their web site; as stated, this does need to be updated. They have always made the site available to Federal and State officials (e.g. Sec. Gutierrez, Chairman Connaughton, and staff, NOAA Marine Mammal staff, Whale Sanctuary, DAR, your office, etc); indeed they always would welcome government officials to the site.

Staff contacted the Department of Health to confirm whether KBWF is in compliance with National Pollution Discharge Elimination System (NPDES) permit requirements. On March 7, 2007 DOH personnel e-mailed OCCL staff and stated "KBWF is in full compliance with the issued NPDES permit". DOH also notes that KBWF was having difficulties passing their toxicity tests for their application of hydrogen peroxide for "skin flukes," but KBWF is conducting a toxicity reduction evaluation and looking to modify the treatment protocols so that they may pass the test.

Staff would like to note that KBWF does not appear to have been fully compliant with CDUP conditions that require the submission of monitoring information to the DLNR, including, but not limited to, benthic monitoring. While staff does not feel that these "permit breaches" resulted in any harm to the environment, and does not wish to pursue permit violations at this time, staff strongly urges KBWF to review its CDUP conditions to ensure continued permit compliance.

STAFF RECOMMENDATION:

That the Board of Land and Natural Resources approve the Permittee's request to modify their fish farming operation in the offshore of Keahole Point, North Kona, Hawaii, subject to all conditions imposed under HA-3118, and including the following conditions:

1. The permittee shall comply with all conditions imposed under CDUP HA-3118;

2. The permittee shall comply with all applicable Department of Health administrative rules, and shall obtain the clearance of Department of Health for the amended management plan prior to additional cage deployment;
3. Before proceeding with any work authorized by the department or the board, the applicant shall submit four copies of the construction plans and specifications to the chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the applicant. Plan approval by the chairperson does not constitute approval required from other agencies;
4. Any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and, unless otherwise authorized, shall be completed within three years of the approval of such use. The applicant shall notify the department in writing when construction activity is initiated and when it is completed;
5. No non-Hawaii fish specimens or offspring shall be raised in the farm;
6. There shall be no recreational fishing within the lease area;
7. The project, including moorings and anchor lines shall remain within the boundaries of the approved lease;
8. The permittee shall continue to obtain the approval of Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL) prior to changing the grid mooring system;
9. The benthic monitoring protocol shall be reviewed and approved by the Department of Land and Natural Resources. KBWF shall be required to modify their benthic monitoring protocol at the request of the Department should it be deemed unsatisfactory. The permittee shall provide reports of the benthic monitoring to the OCCL and DAR at frequencies acceptable to DAR;
10. The amended management plan shall be revised to reflect the terms and conditions of this approval;
11. Other terms and conditions as prescribed by the Chairperson; and
12. Failure to comply with any of these conditions shall render the permit void.

Respectfully submitted,

Samuel J. Lemmo, Administrator

Approved for submittal:

PETER T. YOUNG, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:PB:DH

CDUA:HA-3118

AUG 19 2003

Neil Anthony Sims, Vice President
Kona Blue Water Farms
P.O. Box 525
Holualoa, Hawaii 96725

Dear Mr. Sims:

Subject: Conservation District Use Permit (CDUA) HA-3118
Kona Blue Water Farms

This letter is to inform you that Conservation District Use Application (CDUA) HA-3118 has been approved by the Board of Land and Natural Resources on August 8, 2003 regarding the request for open ocean fish farm, and is subject to the following terms and conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of Chapter 13-5, Hawaii Administrative Rules;

2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;

3. The applicant shall obtain appropriate authorization from the department for the occupancy of state lands, if applicable;

4. The applicant shall comply with all applicable Department of Health administrative rules;

5. Before proceeding with any work authorized by the department or the board, the applicant shall submit four copies of the construction plans and specifications to the chairperson or his authorized representative for

EXHIBIT 1

approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the applicant. Plan approval by the chairperson does not constitute approval required from other agencies;

6. Any work or construction to be done shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and, unless otherwise authorized, shall be completed within three years of the approval of such use. The applicant shall notify the department in writing when construction activity is initiated and when it is completed;

7. All representations relative to mitigation set forth in the accepted environmental assessment or impact statement for the proposed use are incorporated as conditions of the permit;

8. The applicant understands and agrees that the permit does not convey any vested rights or exclusive privilege;

9. In issuing the permit, the department and Board have relied on the information and data, which the applicant has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;

10. Where any interference, nuisance, or harm maybe caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;

11. The offshore fish farm shall operate six submerged cages at least twenty (20) feet below the ocean surface, but may be raised for repair, transport or other maintenance and two surface cages not to exceed 45 feet in diameter;

12. The use of feeds containing supplemental hormones shall not be allowed;

13. The culture of fish species (kahala, ulua and mahi-mahi) is approved. No other species is approved. Any further culture of fish species must be approved by the Chairperson of the Department of Land and Natural Resources;

14. Signs or other markings of the site shall be regulated by site plan approval. The applicant shall immediately report any ocean use conflicts, such as entanglement of fishing nets on the farm facility, to both the boating and land divisions. Buoys, signs or other markings shall be

EXHIBIT 1

provided on the ocean surface when required by the Chairperson;

15. The applicant shall forward details of all monitoring efforts to the DLNR and water quality results to the Department of Health, two weeks after receipt of the results. The department shall be immediately notified of the failure of the mooring system, a disease outbreak, theft or vandalism;

16. The applicants, at their own expense, shall develop and conduct a water quality, benthic and coral reef monitoring protocol approved by the Chairperson. Such environmental monitoring shall continue indefinitely as specified by the Chairperson unless authorization for its suspension or reinstatement is specified by the Chairperson;

17. The applicant shall periodically sample ocean-farmed fish, and when necessary, fish in the area of the farm, and examine the sampled fish for parasites or other disease. Unless the Chairperson specifies other methods of sampling and analysis, sampling shall occur not less than once per year;

18. The applicant shall submit all research, data, results or other publications, papers or reports concerning the fish farm and its surrounding environment to the department and shall use objective, independent third parties to collect water quality samples. The data shall be analyzed by independent agencies or laboratories. The applicant shall place copies of all Federal or State-mandated environmental quality reports at local repositories, such as the DLNR, Division of Aquatic Resources office at Honokohau, so that local residence may review the data. The applicant shall provide reasonable access to Federal, State and County officials for monitoring and oversight purposes. The applicant need not submit information related to farm operations which is not necessary to evaluate the quality of the environment at the submerged fish farm and surrounding areas;

19. The applicant shall monitor the condition of the submerged fish farm on a daily basis. When weather and surf conditions do not permit physical monitoring, visual monitoring shall be conducted;

20. The lease shall be in compliance with Chapter 190D, HRS. The applicant shall implement mitigative measures approved by the Chairperson to alleviate environmental or use concerns, when the need is apparent or when required by the Chairperson. Such mitigative measures may include the partial or complete removal of the fish farm facility;

21. Cages, anchors, lines and other fish farm facilities shall be removed at the conclusion of the use;

EXHIBIT 1

22. Any nets or other debris that foul on the cages or other part of the farm facility shall be disposed of as required by federal, state and city and county regulations and shall not be set free in the marine environment;

23. The applicant shall work with NOAA to develop and implement a marine protected species monitoring and reporting program in coordination with, and subject to the approval of the Division of Aquatic Resources. The program will ensure to the maximum practicable extent that all close approaches and direct physical interactions of marine protected species with the project's structure(s) are recorded, described and reported to state and federal marine protected species agencies in an effective and timely manner. Direct physical interactions will include, but not be limited to collision, entanglement, grazing, or any other direct physical contact between any part of the structure (cages, mooring lines, buoys, etc.) and any marine protected species (all species of cetaceans and sea turtles.) This program must be completed prior to commencement of operations;

24. The applicant shall work with NOAA to develop a project activity modification protocol in coordination with, and subject to the approval of the Division of Aquatic Resources. The protocol will describe conditions and criteria related to adverse impacts on marine protected species that would trigger associated mandatory modification of project activity. The criteria and conditions will include, but not be limited to direct physical contact between marine protected species and any part of the structure. Associated mandatory project activity modifications will range from increased monitoring to immediate project shut-down and removal of the entire structure, depending on the severity of the impact(s). This protocol must be completed prior to commencement of operations;

25. Dead fish shall not be disposed of in the surrounding waters but shall be removed from the site and disposed of at a County approved site;

26. Other terms and conditions as prescribed by the Chairperson; and

27. Failure to comply with any of these conditions shall render the permit void;

B. That the Board of Land And Natural Resources finds that:

1. The applicant's lease shall be subjected to section 171-53 HRS, and to the concurrence of the Director of Transportation;

2. The Applicant's lease is for commercial purposes;

3. The Applicant's lease will not adversely impact existing programs of the Department;

EXHIBIT 1

4. The Applicant's lease is clearly in the public interest upon consideration of the overall economic, social and environmental impacts and is consistent with other State policy goals and objectives; and

5. The Applicant has complied with all applicable Federal, State and County statutes, ordinances and rules.

C. The applicant understands that if an appeal to the Environmental Assessment (FEA) is filed within the thirty (30) day appeal period for the FEA, the Board's approval becomes null and void.

Please acknowledge receipt of this permit and acceptance of the above conditions by signing in the space provided below and returning a copy to the Office of Conservation and Coastal Lands within thirty (30) days.

If you have any questions regarding this matter please contact Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380.

Sincerely,

Dierdre S. Mamiya, Acting Administrator
Office of Conservation and Coastal Lands

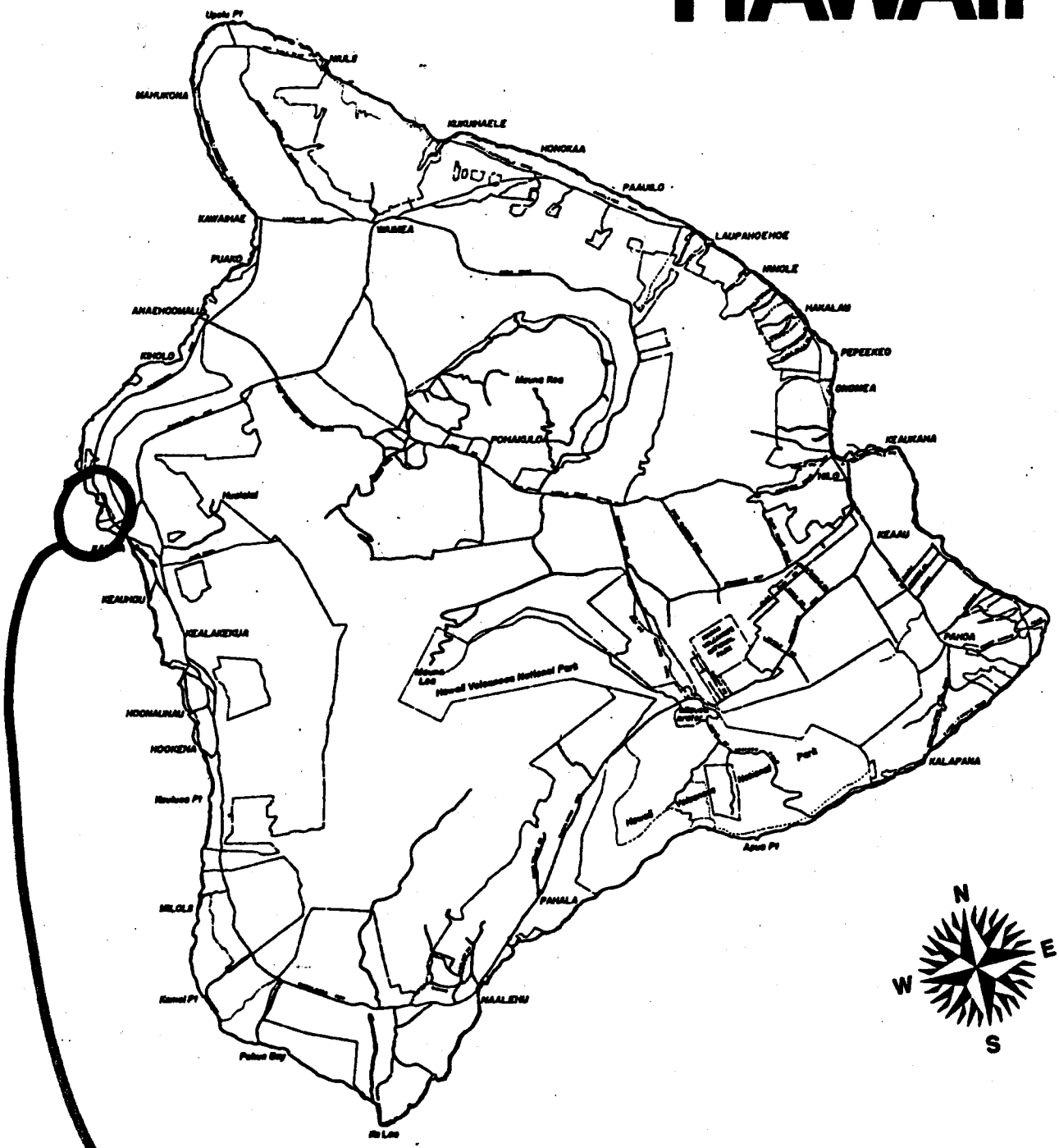
Receipt acknowledged: _____

Date: 8/21/03

Cc: Hawaii District Land Agent
Hawaii County Department of Planning
Department of Health
DAR – Hawaii Branch
NOAA- HIHWNMS
DBEDT- CZM

EXHIBIT 1

HAWAII



Proposed Project Site
Kona Blue Water Farms
Aquaculture Project

EXHIBIT 2

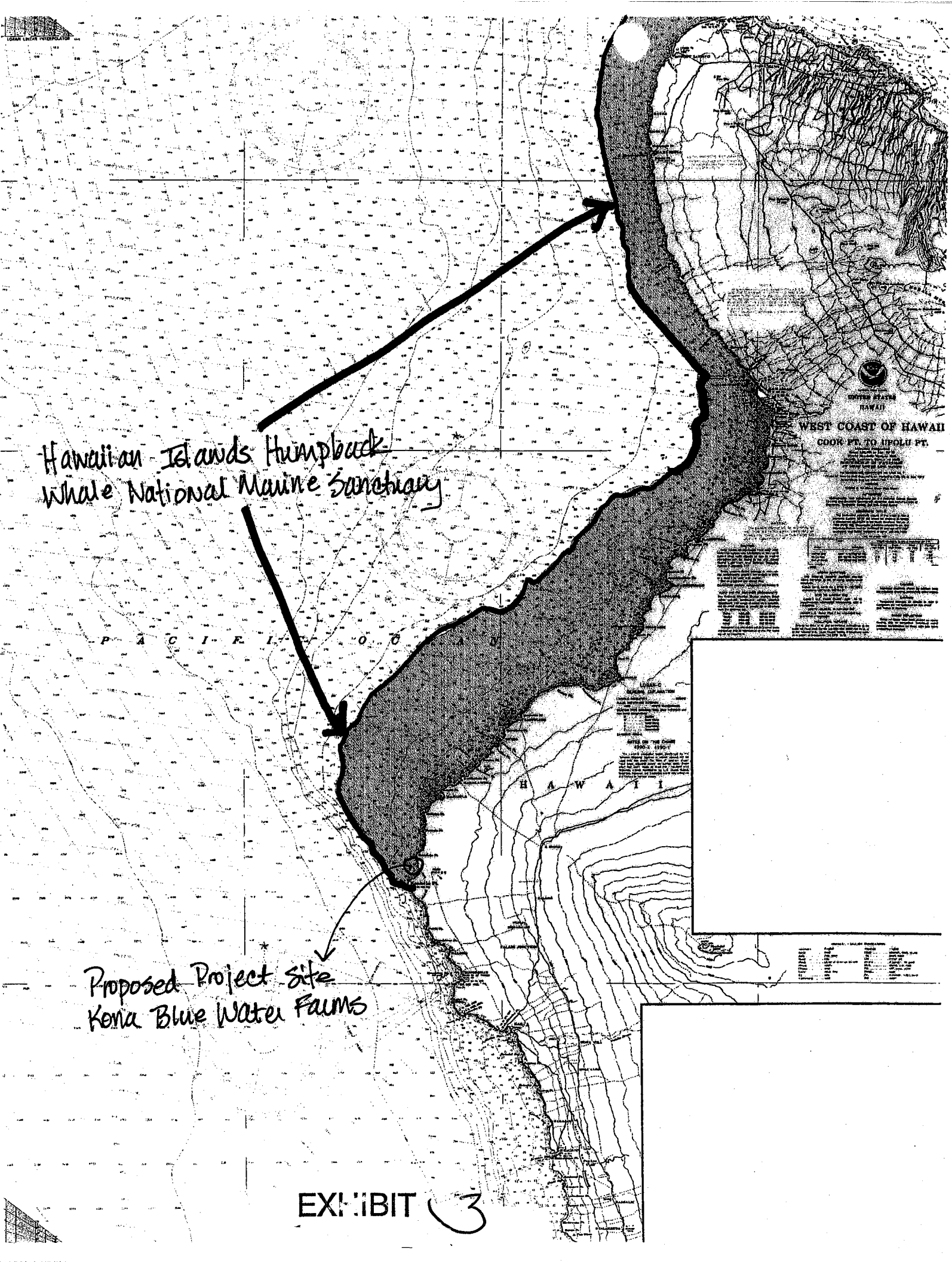

Hawaiian Islands Humpback Whale National Marine Sanctuary
WEST COAST OF HAWAII
COOK PT. TO UPOLU PT.
P A C I F I C O C E A N
H A W A I I
Proposed Project Site
Kona Blue Water Farms

EXHIBIT 3

Figure 5: Movements of spinner dolphins

The migration by spinner dolphins (*Stenella longirostris*) through the area suggests that the farm will not interfere in any significant manner with the animals' movements. *As the farm has now been relocated a further 600 ft to the west (offshore), resting dolphins will now no longer have any overlap, even with the unoccupied SE corner of the lease area (Jan Ostman-Lind, pers. comm.). Resting dolphins will not come within 600 ft of mooring lines or anchors, and will be at least 1,200 ft from the net cages under the present farm mooring design.*

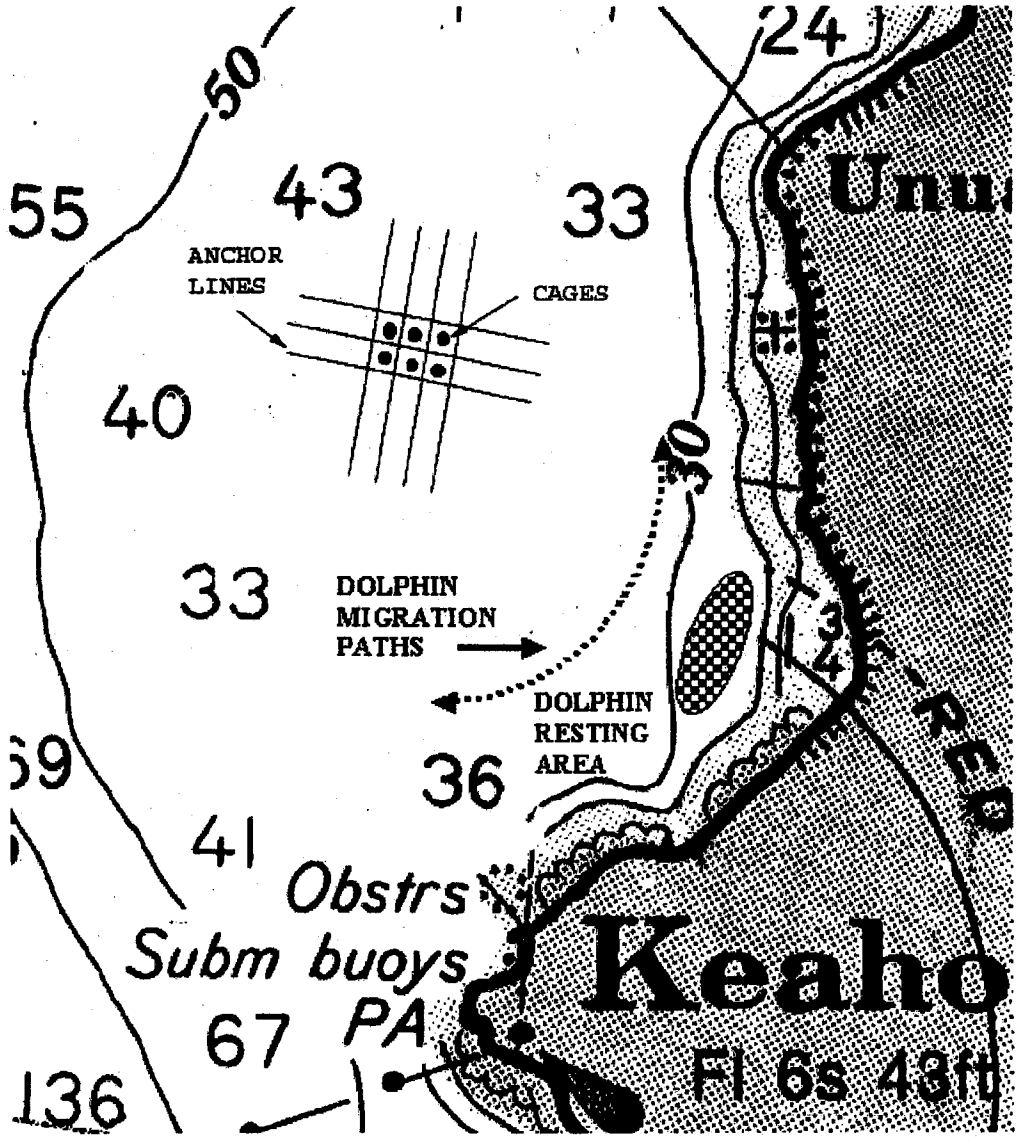
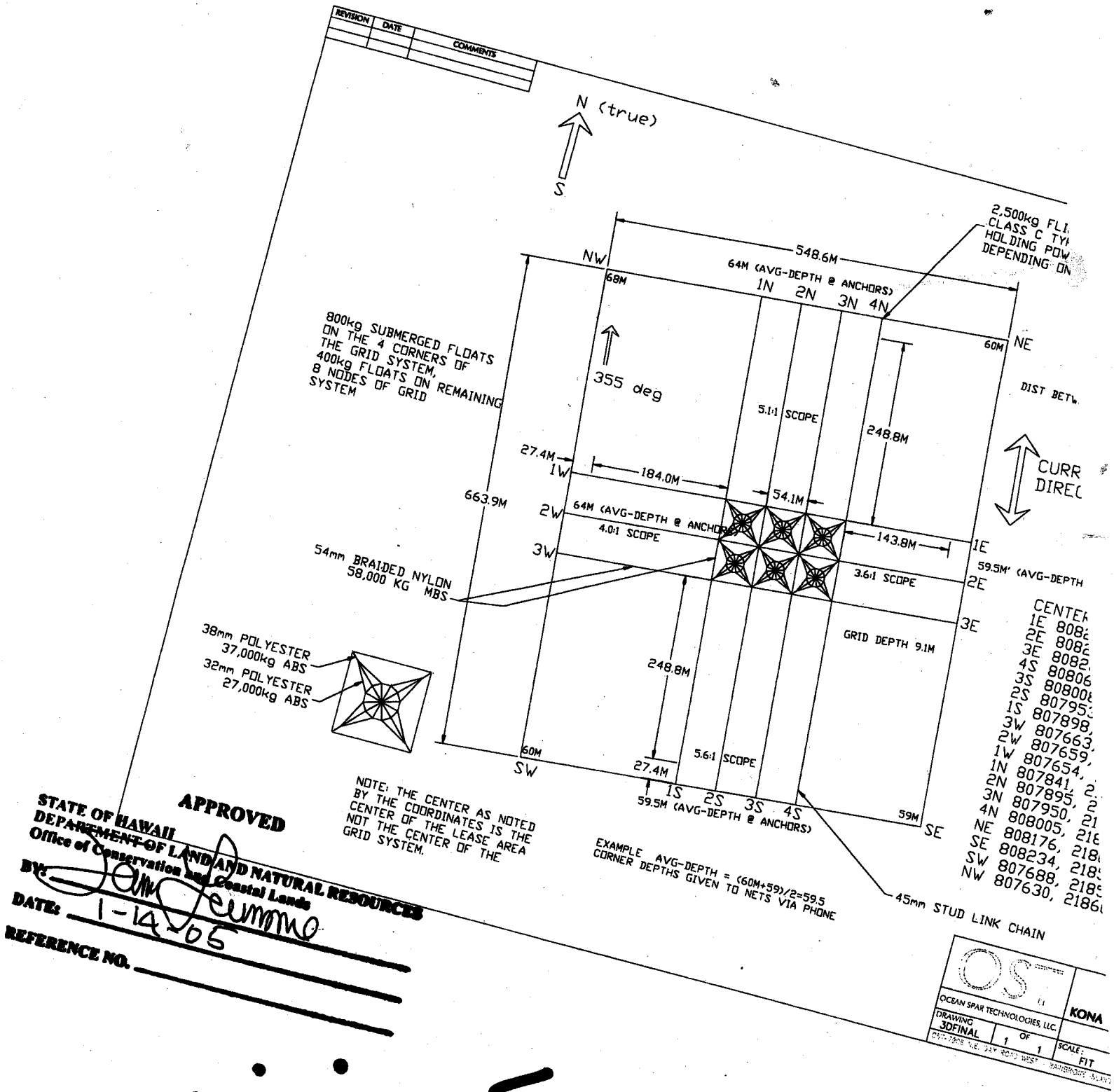


EXHIBIT 4



APPROVED
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands
BY: [signature]
DATE: 1-14-05
REFERENCE NO.

ORIGINAL SUBMERGED CAGE LAYOUT

EXHIBIT 5

KONA BLUE™
KONA BLUE WATER FARMS

Dawn Hegger
Office of Conservation and Coastal Lands
DLNR, Honolulu, Hawaii

FAX 587 0322

Dear Dawn,

We would like to inform you of some recent developments at our offshore farm site that we need to communicate to "the Department" under the terms of our CDUA. These developments primarily cover some proposed alterations to our cage mooring grid system, and our concerns about safety of employees and the public.

Firstly, we believe that we need to add more vertical mooring lines underneath the mooring grid to ensure that the steel buoys at the intersection of the grid-lines are always held below the surface. As you are aware, because of public concerns about our original proposed site in our draft EA, we had relocated our farm site a further 600 ft offshore in the Final EA submission for our CDUA. It appears that this has placed us in a corridor that receives particularly high current. Whereas at the original proposed site we had recorded current spikes rarely as high as 1.6 knots, at the new site further offshore we have, over the past year, recorded currents regularly up around 2 knots. In one recent instance, currents were estimated at over 3 knots sustained for a period of several days. Over this recent period of prolonged high current, many of the steel buoys that provide tension to the grid corners rose to the surface. This was either from movement of the anchors or stretch in the lines; the precise reason is difficult to determine because the depth of the anchors is beyond the limits of safe diving.

In any case, several of these buoys now remain permanently at the surface, which may start to compromise the grid integrity (in an engineering sense) and could also represent a hazard to navigation. We have placed marker floats on these buoys, and flashing white lights on those on the outer corners (we also have lights on the surface cages at the center of the grid). As an immediate first step, we placed two concrete weights underneath the two most emergent of these buoys. (These weights would normally have sat beneath cages 5 and 6, which have yet to be installed). We also now seek your permission to install a further four concrete weights and vertical mooring lines under each of the four corners of the grid, to bring the grid back down below the surface.

We are also arranging to purchase and bring to Kona a vessel with sufficient horsepower to enable us to re-set these anchors, so that the movement or stretching can be accommodated in the normal grid system. We still believe, however, that installation these vertical mooring lines will be a wise addition, to address potential recurrence of this event.

P.O. Box 537 • Holualoa, Hawaii 96725-0537 • Ph: 808-331-1188 • Fax: 808-331-8689 • www.kona-blue.com

EXHIBIT 6

KONA BLUE™
KONA BLUE WATER FARMS

I have attached a figure to indicate where these additional lines would be placed. These would be taut-line moorings. We would appreciate your prompt response to this request. Because of the concerns to public safety and grid strength, we would like to install these additional anchors in the next week or two.

Secondly, we would like to place warning buoys and flashing lights on the surface at each of the four corners of the grid. We certainly do enjoy seeing prudent fishermen make good use of the fish aggregating qualities of our farm. Some local fishermen are regularly catching ono, ahi and mahimahi around our farm, and an enterprising pair of opelu fishermen are making hoop net hauls on a daily basis within our farm area. Unfortunately, some other fishermen are less careful, and have brought their boats, with trolling lures set, very close to the surface cages, the surface buoys or the submerged grid. This has resulted in hooks and lures becoming tangled in our mooring lines with increasing regularity. This represents a danger to our farm workers, who may be enmeshed in the fishing line or hooked by the lures while diving or working around the lines.

We would like to propose that we install marker floats at each of the four outer corners of the surface grid (as indicated on the diagram), with taut moorings to the subsurface buoys at these corners. This will then provide a reference point for fishermen, so that they know where our grid-lines and bridle-lines are, and can avoid this area. We would then inform the local fishing community – through newspaper and magazine articles such as Jim Rizzutto's fishing column, and through flyers or notices placed around the harbor - of the significance of these marker buoys. The area around our cages would still be accessible to the public, for traversing or fishing for opelu, or even for trolling, if people choose to do so. However, by their being able to better recognize where the boundaries of our submerged cage grid area is, we believe they will prefer to not risk entanglement with our lines. This will save them their lost lures, and save our divers the risk of impaling their hands on a rusty hook.

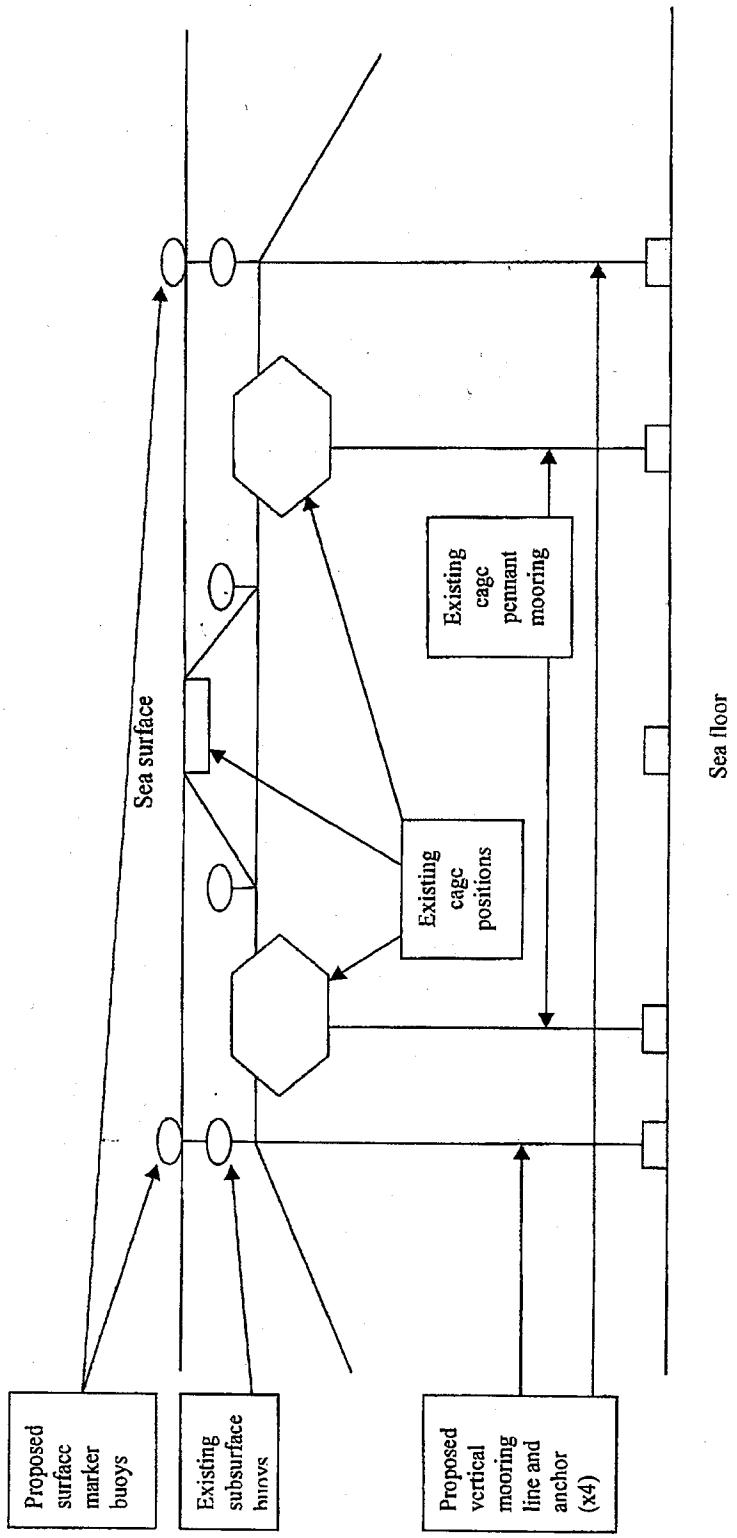
Please let us know if this request meets with your approval. We would be happy to answer any questions or concerns that you may have regarding this matter.

Thanks, and sincere aloha,

Neil Anthony Sims
President

P.O. Box 537 • Holualoa, Hawaii 96725-0537 • Ph: 808-331-1188 • Fax: 808-331-8689 • www.kona-blue.com

EXHIBIT 6

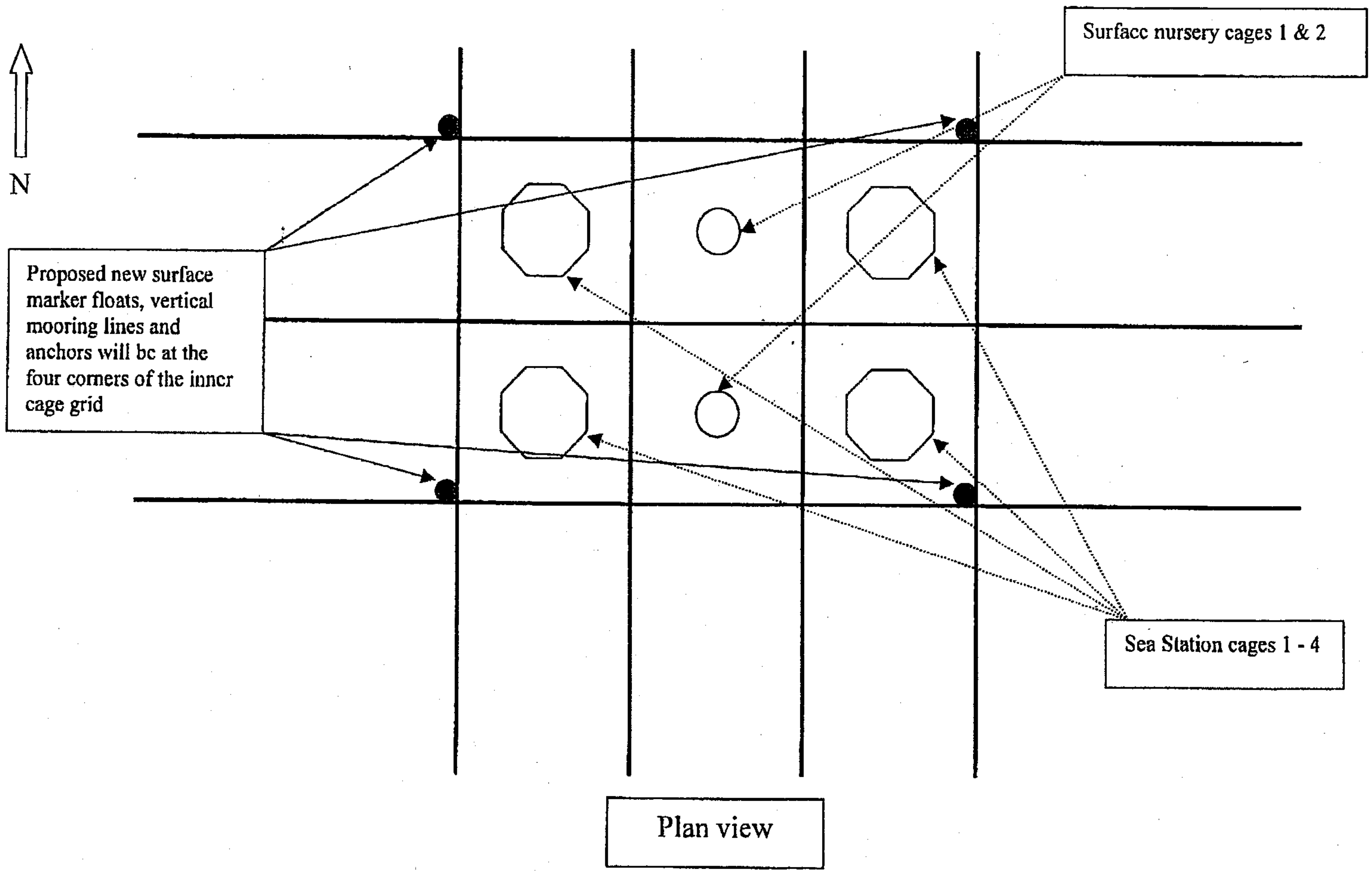


Elevation

Drawing not to scale. Shapes are representational only. Proposed new additions shown in red font.

I will submit pdf after.

EXHIBIT 6



Drawing not to scale. Shapes are representational only. Proposed new additions shown in red font.

I will await your file. N

EXHIBIT 6

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:DH

CDUA:HA-3118

FEB 13 2006

Neil Anthony Sims, Vice President
Kona Blue Water Farms
P.O. Box 525
Holualoa, Hawaii 96725

Dear Mr. Sims,

SUBJECT: Installation of predator nets, four concrete weights, vertical mooring lines, warning buoys, flashing lights, and marker floats for Conservation District Use Application (CDUA) Permit HA-3118, Kona Blue Water Farms, Kona, Island of Hawaii

The Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL), is responding to your request regarding the installation of predator nets, four concrete weights, vertical mooring lines (under the existing mooring grid), warning buoys, flashing lights, and marker floats for Kona Blue Water Farms (KBWF).

Predator Nets

You note that the full predator nets would be attached directly to the outer float ring of the cage frame, at the surface, and would enclose the entire main net, weight ring and downlines, like a sock. It would be held about 1 – 2 m below the main net by the weight ring. As it would be attached to the existing float ring and weight ring, it would not add significantly to the existing moorings. The design would add an additional large mesh layer to the sidewalls; it should not add to the drag or increase deformation of the net. KBWF would be able to remove this net for cleaning, which should ensure that drag always remains low. To provide additional tension to the predator net, KBWF reserves the decision to add weights to the center of the net bottom. This would also have the added benefit of keeping the predator net well clear of the main net at the point where any mortalities may aggregate, thereby further reducing the chance of sharks or other predators accessing these morts **(Exhibit 1)**.

Concrete Weights, Vertical Mooring Lines, Warning Buoys, Flashing Lights, Marker Floats

During the CDUA process, KBWF relocated the farm site a further 600 feet offshore. KBWF notes that this location has placed you in a corridor that receives a high current. Several of the buoys remain permanently at the surface, which may start to compromise the grid integrity (in an engineering sense) and could also represent a hazard to navigation.

According to your information, you would like to install four concrete weights and vertical mooring lines under the existing mooring grid. These would be taut-line moorings. Several of the steel buoys

EXHIBIT 7

that provide tension to the grid corners have risen to the surface; it may compromise the grid's integrity. KBWF would like to install warning buoys and flashing lights on each of the four corners of the grid (as hooks and lures are ensnared in the mooring lines). Lastly, KBWF would like to install marker floats at each corner of the four outer corners of the surface grid to educate fisherman on the current mooring system.

The Department notes that the improvements are considered accessory structures, pursuant to Hawaii Administrative Rules (HAR), Section 13-5-24, L-7, STRUCTURES, ACCESSORY, B-1, "construction or placement of structure accessory to an existing structure, building, or facility under an existing Conservation District Use Permit. Accessory uses shall be allowed only if they are consistent with the purpose of the Conservation District." The proposed project is minor in scope and may be considered an exempt action under State environmental laws under HAR, Section 11-200-8(6).

ANALYSIS:

The OCCL has no objections to approving Site Plan Approval (SPA) HA-06-25 for the current request, as long as the work occurs within KBWF leased area with the State of Hawaii. Under Section 13-5-24, HAR, the use is an identified land uses in the Limited subzone, L-7, STRUCTURES, ACCESSORY, B-1, "construction or placement of structure accessory to an existing structure, building, or facility under an existing Conservation District Use Permit. Accessory uses shall be allowed only if they are consistent with the purpose of the Conservation District." This requires Site Plan Approval. In addition, the proposed project is minor in scope and may be considered an exempt action under state environmental laws under Section 11-200-8(6), HAR.

Authorization is hereby granted to install the predator nets, four concrete weights, vertical mooring lines (under the existing mooring grid), warning buoys, flashing lights, and marker floats for Kona Blue Water Farms (KBWF), subject to CDUA HA-3118's terms and conditions, and the following terms and conditions:

1) The applicant shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State and County governments;

2) The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury or death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;

3) Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;

4) Any work done or construction to be done shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by

EXHIBIT 7

the Chairperson, and, unless otherwise authorized, shall be completed within three (3) years of the approval. The applicant shall notify the Department in writing when construction activity is initiated and when it is completed;

5) The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;

6) Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;

7) In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;

8) Other terms and conditions as may be prescribed by the Chairperson; and

9) Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.

Lastly, the OCCL notes that you indicate that you will be installing two more aquaculture cages State-leased waters. When KBWF has made a decision regarding the placement of the cages, please contact us at the earliest date so we may arrange a meeting between KBWF and the Division of Aquatics, Division of Boating and Ocean Recreation, the Hawaii District Land Office (if necessary), and the OCCL to discuss comments and concerns.

If you have any questions regarding this matter please contact Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380.

Sincerely,

Samuel J. Lemmo, Acting Administrator
Office of Conservation and Coastal Lands

c: Chairperson
DAR
DOBOR
HDLO

Agreed & accepted:

Neal Anthony Sims
President, Kona Blue.

EXHIBIT 7

KONA BLUE™

October y 22, 2006
OFFICIAL LETTERHEAD 2.doc

Dawn Hegger
Office of Conservation and Coastal Lands
DLNR, Honolulu, Hawaii

FAX 587 0322

Dear Dawn,

As per our discussion several weeks ago, I would like to inform you of the following progress with our open ocean Kona Kampachi™ farm, and to request two modifications to the permit for our operations.

1. You will recall that, as per our permit, we had been using two 50ft diameter black surface cages for nursery culture. However, we had suffered some problems with predators causing breaches in the netting of these cages. This, in turn, led to some escapes of our fish, which had in turn caused concern about the possibility of endangered species such as monk seals being attracted to the cage structure.

2. In discussions with the National Humpback Whale Sanctuary staff, and NOAA marine mammal experts, we agreed that the best solution was to install a predator net around our surface cages, to prevent such net breaches. At that stage, all the available evidence suggested that these large-mesh outer nets would prevent predators gaining access to the net containing the fish, but that there would be no risk of entanglement of larger animals in the mesh.

3. On installation of the predator net, however, I and a number of the other biologists on our staff became very concerned with the entanglement risks that this structure represented. On several instances, this net gilled large barracuda and rainbow runners. We believed that the best course of action was to remove this net as expeditiously as possible. This we then did, and communicated this to Sanctuary staff, and to you.

P.O. Box 537 • Holualoa, Hawaii 96725-0537 • Ph: 808-331-1788 • Fax: 808-331-8689 • www.kona-blue.com

EXHIBIT 8

4. We therefore decided to completely revert to submerged nets for nursery culture. The submerged nursery nets sit internally in the submersible Sea Station cages, and share the same attributes as the Sea Stations: taut Spectra web meshing, which is not vulnerable to either predator breaches or entanglement. The taut outer net also acts as a 'predator net', protecting the interior nursery net. Use of internal nursery nets does limit our production cycles, however, as we cannot place juveniles in the nursery net until all the larger fish from the previous cohort have been removed from the outer cage.

5. We have since removed all the nets from the surface cages, and have temporarily moored these cages off to the side of our grid. We have no plans to use them again in the future. We have installed a nursery net into the newest one of our Sea Stations, and we intend to stock this cage within the next week.

6. We also recently installed the fifth of our Sea Station cages into our grid. You will recall that under our existing permit, we had proposed that as we increased the number of cages offshore to more than four, we would need to re-moor the surface cages separately (as there was only room in the grid for six cages). This could have been either to one side or the other of the existing grid, or on an independent grid elsewhere within the lease area.

7. We would like to now propose that we alter our Farm Permit, to allow us to permanently remove these surface cages, and instead replace them with two of the submersible Sea Station cages, which we could use as both nursery cages and for grow-out. This would represent a significantly reduced impact on the view plan of boaters and others in the area, and would allow us to maintain our cage stocking sequence, to ensure that there are no breaks in production. The volume of water enclosed within the submersible cages would be somewhat larger (2,600 m^3 vs 1,640 m^3 for the surface cages), but this simply means that the fish will be held at lower densities; this larger volume should have no impact on the public perception whatsoever. The major change evident to the public will be that the cages will no longer be visible, except when raised for maintenance work, cleaning or harvesting.

8. We have discussed this possibility with the Ocean Spar company (manufacturers of the Sea Station, and original engineers who designed our cages and mooring grid) and they have presented a configuration for mooring these two further Sea Stations on the Eastern side of our existing grid. The Eastern side would be preferable because there is less exposure to the brisk currents moving past Keahole Point. The anchors and cages will still be wholly contained within the 90 acre lease area (see attached diagrams).

9. As we look towards further growth of our operation, we have also come to realize the importance of adding a feed barge to our offshore system. This development is critical for improving feed efficiencies (allowing us to feed at optimum times and

EXHIBIT 8

amounts during the day, and on days when it is not possible to reach the site), increased use of more sustainable feeds (using synthetic amino acids instead of Peruvian fish meal requires that fish be fed several times per day, instead of daily), improved worker safety offshore (rather than manhandling feed bags on a rolling deck, as our workers do presently, all loading of the feed barge would occur using augers or blowers), and improved monitoring of the cage site (telemetry would allow video images from inside the cage to be relayed to shore stations). Cates International, Inc. has already installed a feed barge on their site offshore from Ewa Beach, and they have found it resulted in tremendous improvements in efficiencies in production, and worker safety and welfare.

10. We are therefore asking that our permit be modified to allow us to replace the two surface cages with Sea Station cages, and to install a feed barge permanently on the site, as described in the attached engineering drawings. The anchors, mooring systems and cages would all be very similar to those which we have already installed. The feed barge would be either a boat-type or a barge-type. It would be moored on the new grid configuration, and connected to the existing grid to allow feed lines, air lines (for raising and lowering the cages) and video cables to run to the existing cages.

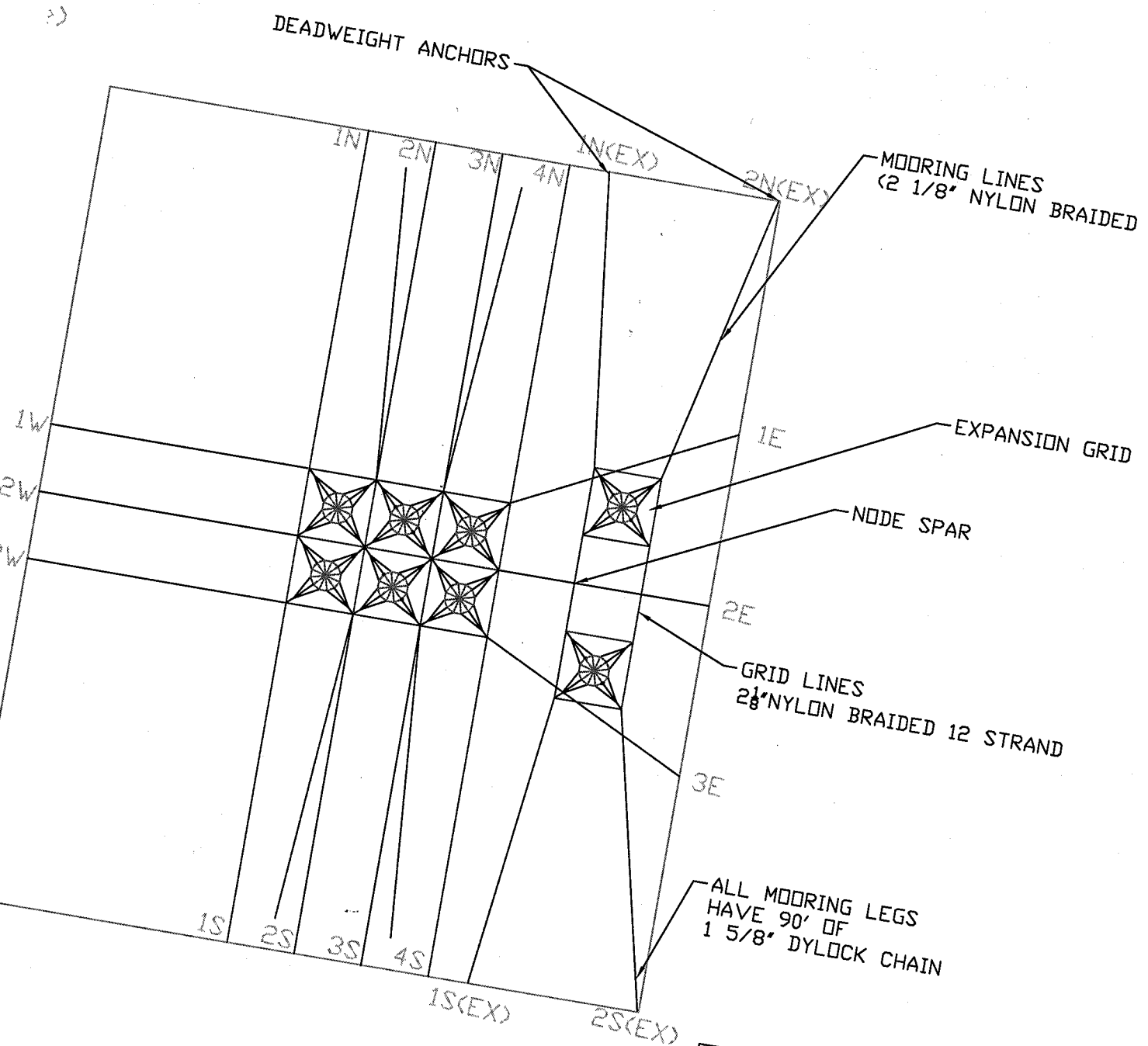
Please let us know if you have any questions or concerns. We would appreciate your soonest response. We look forward to continuing to work with the State to further the growth of sustainable, environmentally sound open ocean fish farming in Hawaii's offshore waters.

Sincerely, with aloha,

Neil Anthony Sims
President

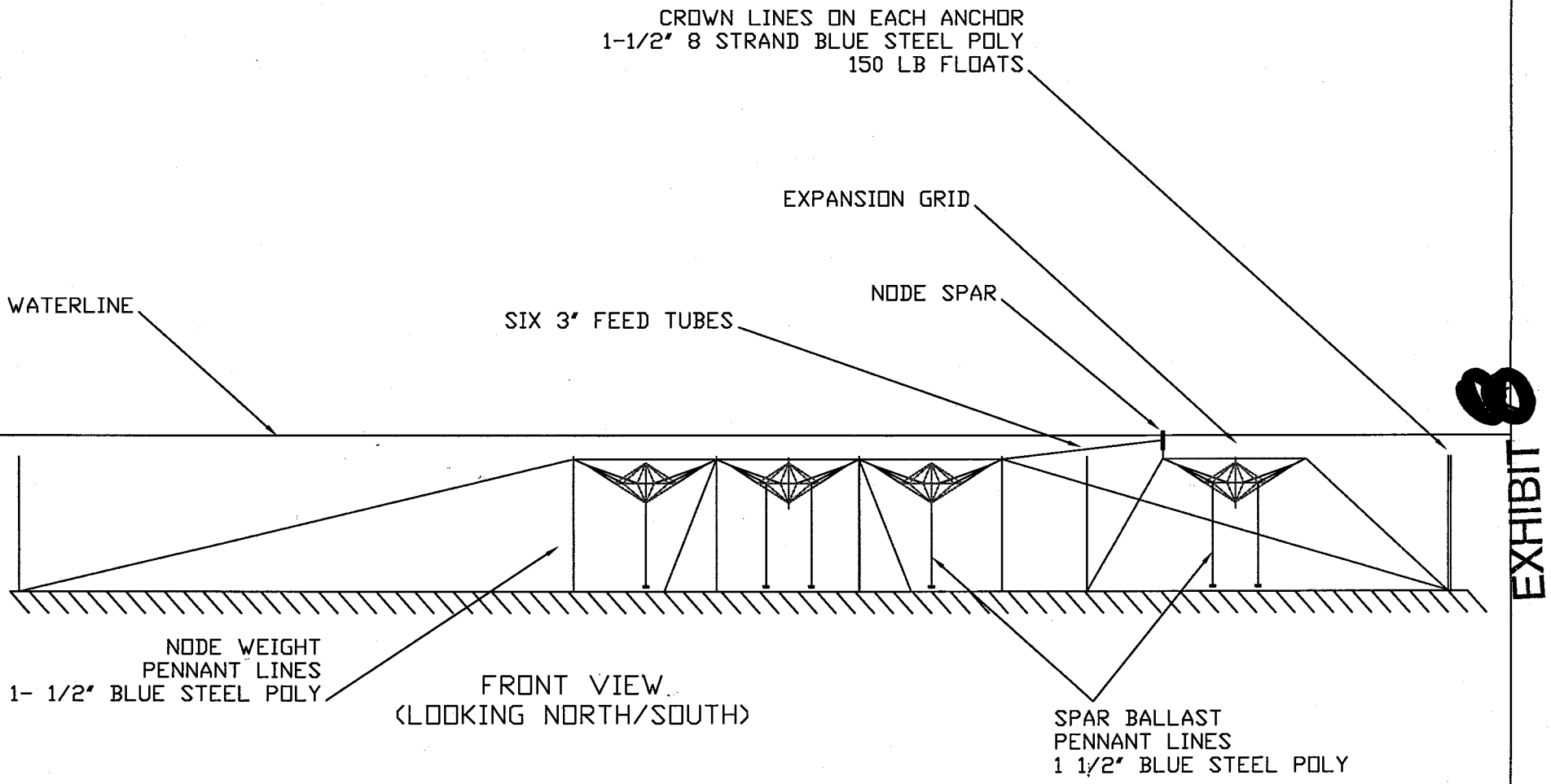
cc. John Corbin, Aquaculture Development Program, Fax 808 587 0030

EXHIBIT 8



OceanSpar 755 Winslow Way East, Suite 300 Bainbridge Island, WA 98110 USA (206) 319 3685		Client KONA BLUE
CONFIDENTIAL	EXPANSION	KEAHOLE POINT CAPACITY
DESIGNED BY LRG / DRAWN BY LRG / 11/27/06	KBEXP.DWG	SCALE / 1 OF 3

EXHIBIT 8



FRONT VIEW
(LOOKING NORTH/SOUTH)

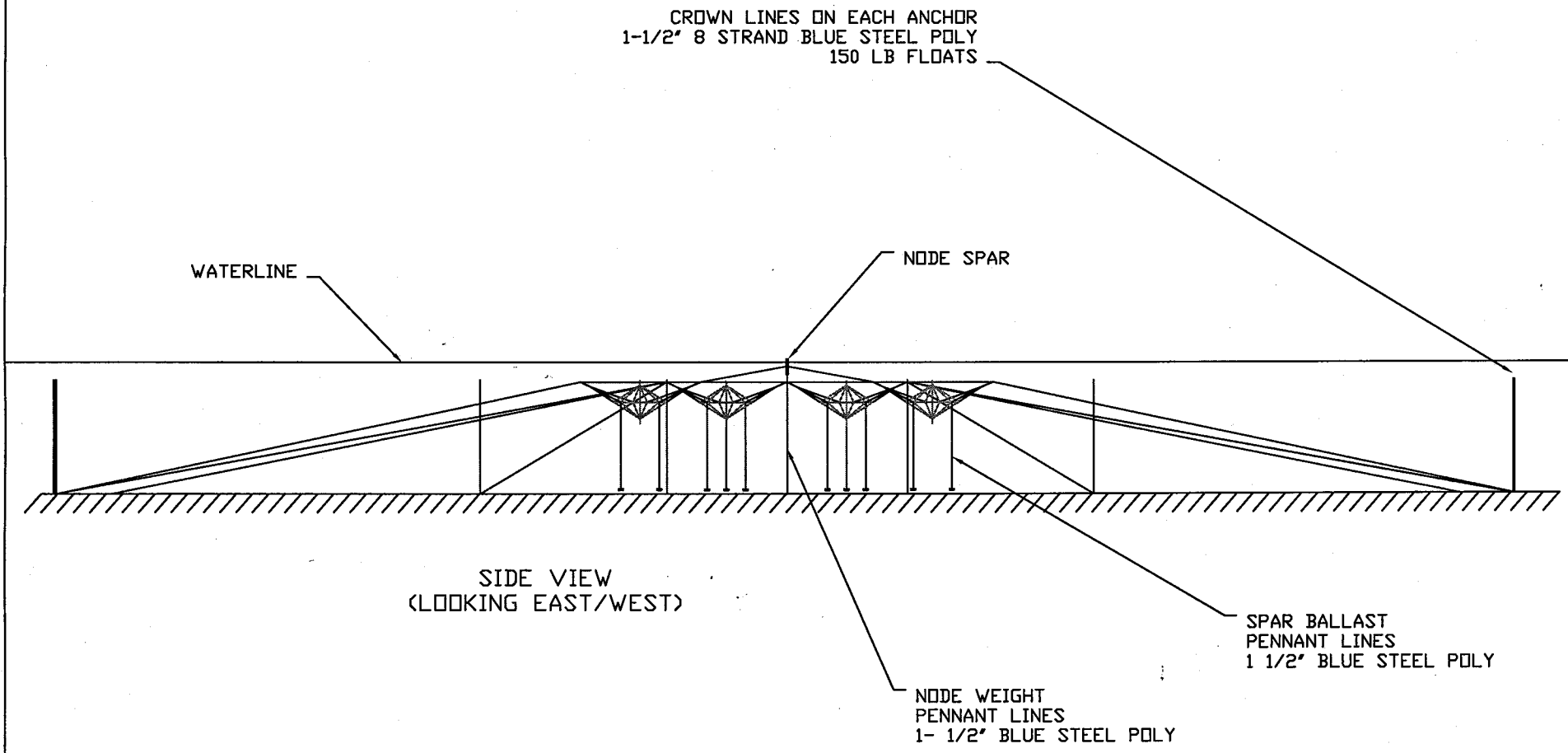
EXHIBIT 8

OceanSpar
755 Winslow Way East, Suite 300
Bainbridge Island, WA 98110 USA
(206) 319 3685

Client
KONA BLUE

CONFIDENTIAL	EXPANSION	KEAHOLE POINT CAPACITY
DESIGNED BY: LRG	DRAWN BY: LRG	11/27/06
KBEXP.DWG	SCALE	2 OF 3

EXHIBIT 8

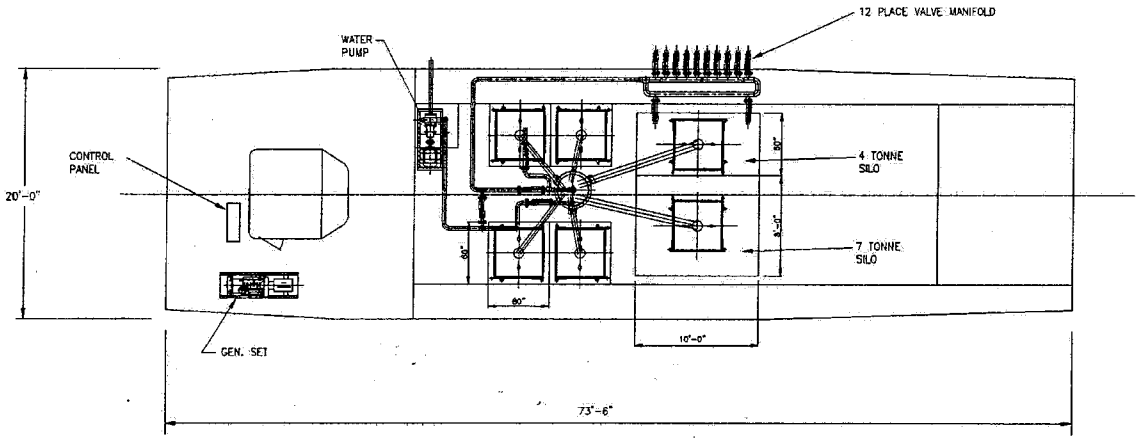


OceanSpar
755 Winslow Way East, Suite 300
Bainbridge Island, WA 98110 USA
(206) 319 3685

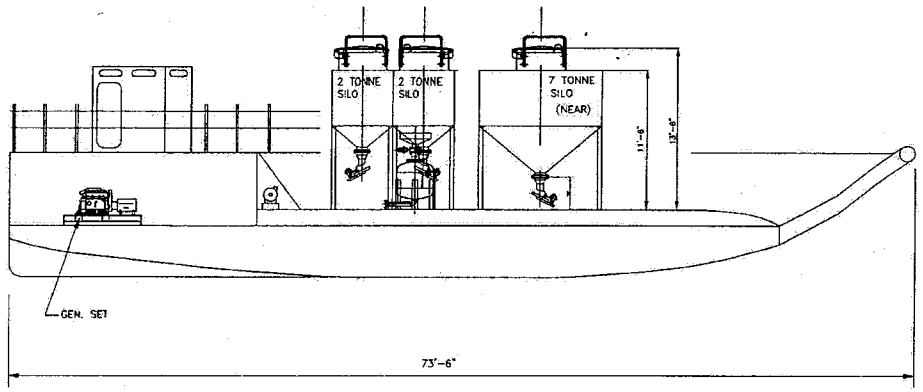
Client
KONA BLUE

CONFIDENTIAL	EXPANSION	KEAHOLE POINT CAPACITY			
DESIGNED BY LRG	DRAWN BY LRG	11/27/06	KBEXP.DWG	SCALE	3 OF 3

PART NO: 1157_A1



PLAN



PROFILE

FEEDMSTR/KONA/1157_A1.DWG

TOLERANCES UNLESS NOTED OTHERWISE	
ALL DIMENSIONS ARE IN INCHES FRACTIONS AND ANGLE	
FRACTIONAL	± 1/8
TWO PLACE DECIMAL	± .05
THREE PLACE DECIMAL	± .010
CAST DIMENSIONS	± 1/16
ANGULAR DIMENSIONS	± 1°

REV	BY	DATE	DESCRIPTION OF REVISION
2			
1			

ENVIRONMENTAL TECHNOLOGIES INC.

APPROVED BY	DATE	FEEDMASTER™ WD AUTOFEEDER EQUIPMENT ARRANGEMENT AUTOMATED FEED BARGE FOR "KONA BLUE"
APPROVED BY	DATE	
ENGINEERING	DATE	DRAWN BY: MLS; DWG DATE: 14FEB, 07; SIZE/SCALE: D=NTS
CHECKED BY	DATE	PAGE NO: 1 OF 1; PART NO: 1157_A1; REV: A

EXHIBIT 8

FEEDER BARGE

KONA BLUE™

November 29, 2006
DAWN HEGGER 10.DOC.doc

Dawn Hegger
Office of Conservation and Coastal Lands
DLNR, Honolulu, Hawaii

FAX 587 0322

Dear Dawn,

As we discussed in our meeting of November 14th, with Jeff Walters, Mike Wink, you and me, our marine engineers that have been working with us to design, install and monitor our open ocean cage moorings have become increasingly concerned about the integrity of the mooring grid system. We therefore need to request your soonest possible approval of the addition of four supplemental anchors, to strengthen the holding power of our existing anchors, and to assure the safety of our investment, the safety of the public, and the ocean environment.

Please allow me to restate the rationale behind this request. Our original permit application had been for a site located 600 ft further inshore. It had been this site upon which we had conducted our current studies, and it was these currents that the engineers in Ocean Spar, LLC (the Sea Station submersible cage company – i.e. the engineers who designed our mooring system) used to specify the particulars of our mooring system. However, because of community concerns about our proposed site's proximity to a spinner dolphin resting site and dive tour operators' SCUBA sites, and the Whale Sanctuary staff's preference for our project to be located further offshore, we agreed to suggestions to relocate our operation a further 600 ft further to the west.

At the time, this change seemed insignificant in terms of the oceanographic conditions (except for the increase in depth, from 150 – 180 ft deep at the original site, to 200 – 220 ft deep at the revised site). However, as we have been working on the site for over 18 months, we have noticed a frequent marked current discontinuity lies now directly inshore of our existing grid. Where we are located now, we are exposed to very high currents, estimated at up to 3 knots. Yet the original site location, a mere 600 ft inshore, has dramatically lower currents; we had used a 'design' current peak for the engineering work of less than 2 knots.

These greater current peaks have created a major concern: that the safety factors on our existing anchors and mooring lines have been diminished to where the entire operation may be at risk. The urgent recommendation from the Ocean Spar engineers – which we feel that we cannot ignore – is that we must deploy four additional 30 Tonne concrete deadweight anchors, and four attached mooring lines, to supplement the holding power of the two most central mooring lines on the Northern and Southern edges of the grid.

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EXHIBIT 9

I have attached detailed engineering drawings, for your consideration. These drawings include both plan and elevation views (from the East and the North), and labeling of the existing grid lines, and the proposed new supplemental mooring lines and anchors.

These diagrams show the supplemental mooring lines to be on a distinctly different angle, in plan view, than the existing mooring lines. The engineers have drawn them in this manner for clarity. As we had discussed with Jeff, however, we would strive to align the new mooring lines as closely to the existing lines as possible, to minimize the further occlusion of the water column with the new lines.

Please let us know if you have any questions or concerns. We would appreciate your soonest response, as the engineers are not able to guarantee the safety of the existing configuration. It is therefore of the utmost importance that we begin the planning for the deployment of these anchors as soon as possible. We would be grateful for your expedited review of this request.

We look forward to continuing to work with the State to further the growth of sustainable, environmentally sound open ocean fish farming in Hawaii's offshore waters.

Sincerely, with aloha,

Neil Anthony Sims
President

cc. John Corbin, Aquaculture Development Program, Fax 808 587 0030

EXHIBIT 9

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:DH

CDUA:HA-3118

Neil Anthony Sims, Vice President
Kona Blue Water Farms
P.O. Box 525
Holualoa, Hawaii 96725

JAN - 5 2007

Dear Mr. Sims,

SUBJECT: Conservation District Use Application (CDUA) Permit HA-3118
Request for Comments for Addition of Concrete Weights and Vertical Mooring Lines for Kona Blue Water Aquaculture Farms, Offshore NELHA, Island of Hawaii

The Department of Land and Natural Resources' (DLNR), Office of Conservation and Coastal Lands (OCCL) is in receipt of your letter, dated November 29, 2006, requesting in addition to the existing fourteen mooring lines, and fourteen anchors to add: 1) four additional 30 ton concrete deadweight anchors; and 2) four additional mooring lines[1]. Please see the attached diagrams for illustrations.

The OCCL notes the Division of Aquatic Resources (DAR), Division of Boating and Ocean Recreation (DOBOR), and the Land Division were consulted regarding KBWF's request to add the additional anchors and mooring lines. The OCCL notes for the most part DAR and the Land Division were satisfied with the request, and DOBOR had no comment[2]. The purpose of the new anchors is to secure the existing cages and does not expand nor change the scope of the project. Therefore, the OCCL notes approval is given to Kona Blue Water Farms to add: 1) four additional 30 ton concrete deadweight anchors; and 2) four additional mooring lines. Please provide a follow up report on the progress to keep the OCCL informed of any issues that arise.

If you have any questions regarding this matter please contact Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380.

Sincerely,

Samuel J. Lemmo, Acting Administrator
Office of Conservation and Coastal Lands

c: Hawaii District Land Office
Jeff Walters/Bill Walsh DAR
DOBOR – Ed Underwood
DOCARE – Lenny Terlep Sr.

[1] This would bring the total number of mooring lines and anchors to eighteen.
[2] Staff has attached the comments for your information.

EXHIBIT 10

AMENDED

MANAGEMENT PLAN

FOR AN OPEN OCEAN FISH FARM

OFFSHORE OF UNUALOHA POINT, NORTH KONA, HAWAII

PREPARED FOR :

Board of Land and Natural Resources,
pursuant to Section 13-5-24 R-1 HAR

PREPARED BY :

Kona Blue Water Farms, LLC
P.O. Box 54239, Kailua-Kona, HI 96745

Dated : February 21st, 2007

EXHIBIT 11

1. GENERAL DESCRIPTION

LOCATION

Pursuant to Section 13-5-34 HAR, Kona Blue Water Farms, LLC, ~~(a division of Black Pearls, Inc.) requests a Board Permit to allow an ocean lease for aquaculture, specifically~~ operates an open ocean fish farm, offshore of Unualoha Point, North Kona, Hawaii (see Figure 1), under a Board Permit and an ocean lease for aquaculture. The farm lease ~~will~~ occupies~~y~~ the surface, seafloor and water column of the State marine waters and submerged lands classified in the Resource Subzone per section 13-5-13 (5) HAR. This use is consistent with the Conservation District, and the Resource Subzone, as identified in section 13-5-24 R-1 i.e. AQUACULTURE.

The farm ~~will be~~ is located in waters of 200 – 220 ft depth, over soft sand substrate, exposed to good current flows. ~~For these reasons, we expect to see minimal environmental impacts (see attached Environmental Assessment).~~ Because of its depth, and the paucity of the bottom biota, there is minimal use of the area at present. The ~~proposed~~ site lies inside of the marlin and tuna fishing grounds off Keahole Point (Figure 2).

The ~~proposed~~ site is a rectangle, with a total area of 90 acres, and sides of 2,000 ft and 1,800 ft (long axis running N-S). The corners of the rectangle are defined by the following latitude and longitude co-ordinates :

Lease corner	Latitude	Longitude
North-east	19° 44.716'	156 ° 03.589'
South-east	19° 44.420'	156 ° 03.589'
South-west	19° 44.420'	156 ° 03.884'
North-west	19° 44.716'	156 ° 03.884'

The depth at the center is approximately 210 ft. The outermost area ~~will be~~ is used ~~exclusiv~~largely for mooring lines. ~~No net pens will be sited in this outer area.~~ The cages ~~will~~ are all ~~be~~ concentrated ~~in~~ towards the center of the lease area (see Figures 1, and 3 (a) and (b)), within ~~a~~ two grid mooring array~~s~~. The closest distance from the edge of this central grid array to shore is approximately 2,580 ft, or almost half a mile to the northeast, to Unualoha Point.

SPECIES CULTURED

The farm ~~intends to~~ culture~~s~~ only hatchery-reared fish that are native to Hawaiian waters.

No alien species will be introduced for culture on this farm. The keystone species is Kona Kampachi ™ (*Seriola rivoliana*). ~~will be kahala and mahimahi, as w~~We ~~have~~are exploring the market potential and hatchery technology for mahimahi, opakapaka and Native Hawaiian giant grouper, and may at some later stage ~~in hand for these fish. We are also currently developing hatchery techniques for opakapaka and other high value fish, and we will~~ substitute these into the farm production as we develop suitable culture systems.

~~Within the first year we expect to be culturing both mahimahi and kahala. Within the second year we hope to initiate opakapaka cage trials, and move towards commercial-scale opakapaka culture in the third year. As the opakapaka come on line, they will substitute for the mahimahi in the production model.~~

NET PEN DESCRIPTIONS

We intend to use only submersible ~~Sea Station™~~ net pens for all grow-out; these will be either Sea Station™ net pens, or similar rigid frame net pens. ~~, with only two smaller surface cages for nursery rearing and harvest. Both types of pens offer advantages.~~ Submersible pens are subject to less wear and tear, and less fouling, but require SCUBA diving to tend the fish, or to monitor feeding. ~~Surface pens allow more careful monitoring of feeding and fish health, and easier access for handling, transfers or harvesting.~~

All mooring lines will be taut, and only taut mesh pens will be used. Anchors and moorings will be engineered to withstand up to 50 year storm conditions.

Any surface obstructions will be lit according to Coast Guard regulations, Class C, which call for white, amber or yellow lighting, with a slow flashing, visible for a minimum of one nautical mile.

The submersible net pens will be similar to the Sea Station 3000™, manufactured by Net Systems, Inc., of Bainbridge Island, Washington State, which are presently used on the ~~moi~~ farm ~~operation off Ewa Beach, in Oahu~~. Each pen is bi-conical in shape, with a central equatorial ring frame of steel tubing. The pen size is 80 feet wide by 60 feet tall, with a steel cylinder along the vertical axis. This is ballasted by a concrete block anchor, suspended from the central cylinder, or from each side of the rim. The pen can be raised to the surface by injecting air into this central cylinder, and lowered by releasing the air.

The frame is covered with a tight netting of Spectra™ mesh, an extremely strong, UV resistant synthetic material that is used in many marine applications. Divers ~~can~~ access the pen by zippered openings. ~~By installing partitions in the pens, more than one cohort of fish can be reared at any one time.~~

The submersible net pens will normally be moored so that the tip of the upper cone lies about 25 – 30 feet beneath the surface. There detriments to having the pen near the surface are the potential risks to navigation, the increased fouling of the mesh by macroalgae, the possible security risks and greater wear and tear from more movement of water. The farm area will be marked, as required by U.S. Coast Guard regulations. ~~Security risks may be managed by passive surveillance systems.~~ A semi-permanent feed / security vessel will be moored on site, but will be able to detach from the mooring in instances of inclement weather, or to load feed, or for

maintenance and repairs. This vessel will have hoses connected to each net pen, allowing the net pens to be fed, observed through video cameras, or raised by use of compressed air. ~~The exact amount of algal fouling in the oceanic waters off Keahole can only be determined by initial trials. While normal algal growth would be slow in these oligotrophic waters, a certain amount of macroalgal fouling might be enhanced, and might be considered beneficial, as it may help to absorb some of the fish's metabolic wastes.~~

The Sea Station cages may be brought to the surface, or just beneath the surface, for transfer of fish into or out of the cages, or for cleaning. In case of hurricanes or other severe ocean storm conditions, these net pens can be quickly submerged by releasing the air from the central column. The pen will then sink until the concrete counterweight ~~that ballasts the central column~~ settles onto the substrate. The process can be completed for a single pen in about 15 minutes. Severe weather advisories or storm warnings usually provide at least one day advance notice, which gives ample time for the work crew to sink the submersible pens.

~~The two surface net pens will be circular in shape, around 15 meters (45 feet) in diameter, with a volume of about 1,770 cubic meters (63,000 cubic feet). The surface ring is made of HDPE tubing. The net hangs vertically from this rim. The net will be made of white nylon Raschel (knotless) mesh, or similar material. An outer small mesh predator net will provide a barrier to separate any potential predators from fish in the pen, or mortalities near the bottom. An additional net panel is raised around the rim to a height of around 5 feet, to prevent escapement of fish by jumping over the net rim.~~

CONSTRUCTION PLAN

The farm will consist of a maximum of ~~six~~ either submersible cages~~, together with two smaller nursery/harvesting pens~~. The cages will all be deployed over the first two and a half years of operation. The mooring grid will be laid out and installed first. As needed, pens will be pre-assembled at ~~Kawaihae~~ Honokohau Harbor, and towed down to the farm site, and deployed by attaching them to the mooring grid. The final two net pens will be installed on a supplemental grid lying to the East of the main grid. This supplemental grid will include the mooring point for the feed / security vessel.

Each anchor line in the mooring grid will be anchored to the sediment with a Flipper Delta anchor (or similar) and ~~a concrete block and Danforth anchor.~~ chain, or with concrete blocks. The precise size and weight of anchor, concrete blocks, chain, and mooring lines ~~are yet to be determined~~ vary depending on the depth and design factors. These particulars will be specified by qualified maritime engineers~~, and will be submitted for review and final approval to the Army Corps of Engineers, as part of the requisite ACOE permit process~~.

The precise location of the anchors will be predetermined by the engineering design, and anchors will be deployed using GPS to ensure accurate installation. The mooring grid will be established

under tension maintained by sub-surface buoys – the taut mooring lines are to ensure that the risk of entanglement of marine mammals is negligible.

Any alterations to the mooring grid that need to be conducted expediently, in the interests of public safety or grid integrity, can be carried out as needed, provided that the changes are in accordance with maritime engineers' specifications, and that the additional moorings do not represent a significantly greater entanglement threat to humpback whales or other marine mammals. Diagrams showing the mooring grid modifications shall be submitted to DLNR within one week of such deployments being completed.

At the termination of the lease, all net pens, subsurface lines and other structures will be removed.

OPERATION PLAN

Fish will be reared to between 6 - 12 months age, including two months of hatchery and nursery rearing on land. Each cohort of fish will then spend 4 - 10 months on the farm site.

Fish fingerlings will be produced in the Kona Blue~~KBWF~~ fish hatchery facilities, based at the Natural Energy Laboratory of Hawaii Authority, or by other commercial hatchery companies that comply with Kona Blue's production requirements. A new cohort of fish from one or the other species will be reared each ~~two months~~ six to ten weeks, depending on the spawning of broodstock. The fish from the hatchery will be held in a land-based nursery facility until they are ready to be transferred (around 1 - 2~~3~~ inches in size), at which time they will be trucked to Honokohau Harbor, transferred to tanks on the work boat, and ferried out to the farm site. On the site, the fingerlings will be initially stocked into a nursery pen inside the submersible net pen, where they will be held for two months, and then transferred to the grow-out pen for the rest of the grow-out period.

At between 4 to 10 months age, we will begin to harvest the fish. The precise harvest timing will vary, depending on the available fish numbers, and the market demand. There is now demand for smaller plate-sized fish (1 – 1½ lbs) as well as larger sashimi or fillet size fish (4 – 6 lbs). ~~Each cohort of fish will be harvested over a two month period, resulting in fewer, but larger fish reaching the final age of 12 months.~~ Harvesting will be undertaken by using crowd nets, with fish pumped from the cages into ~~a the harvest surface pen, and then netted or pumped into a~~ chilled brine solution in the workboat. Fish will be brought ashore and either sold whole, or processed and then shipped to wholesalers ~~or shipped~~, overseas, or distributed directly to local markets. ~~All fish will be sold unprocessed ("in the round", head on and ungutted).~~

Feed systems will vary, ~~depending on the type of net pen~~. The ~~surface~~ nursery net pen will be fed by hand, or with automatic ~~spreader~~ feeders~~, which scatter feed over the water surface~~. These feeders will be timed to ensure that fish are fed small potions at regular intervals (say, every two hours), to ensure that no feed is wasted, and that the fish achieve maximum assimilation (digestion) of the feed. The amount of feed and the interval between feedings will be regularly

adjusted. For the ~~submersible~~ grow-out pens, feed pellets will be mixed with seawater and pumped through a 4 inch or 6 inch hose, and pumped into the center of the pen. Submersible net pens will be fed up to three times per day. Divers or video cameras will be used to ~~regularly~~ monitor feeding by the fish in the submerged pens, to ensure that feed is not wasted.

Divers will regularly check the pens for damage, and to remove any mortalities. Under inclement conditions, the site will still be monitored visually, from the shore at Keahole Point. Pen maintenance will also include regularly inspecting and repairing, if necessary, the spar, ring, support cables anchor system and net enclosures on a regular basis (biweekly to monthly, depending on component).

The design life of all components, other than the net pen itself, is 15 years. All metal parts will be anodized, and sacrificial zincs will be used to prevent rust. The ropes for the moorings may encounter some abrasion, and may need to be replaced on occasion. The nets themselves are designed to have a maximum working life of around 5 years. Nets will be cleaned regularly, to diminish the drag forces on the mesh. Patching of nets can be accomplished by divers. ~~Nets in the surface nursery and harvest pens can be changed quickly and easily while fish are inside the pen.~~ For the submersible grow-out pens, fish must be removed before the net can be fully replaced. Used nets will be disposed of in the commercial solid waste system.

Nets will be cleaned by divers ~~hand brushing with stiff bristled scrubbing brushes~~ or ROVs using pressure washers, or by robot cleaners. No chemicals will be used in the cleaning process. ~~Periodically, nets may need to be replaced and dried out. These nets will be transported to the KBWF facility at NELHA, where they will be washed and dried, before being returned for re-use. All waste water from net washing on land will be disposed of in an in-ground effluent system, designed for this purpose.~~

The site will be serviced by a ~~single~~ variety of work vessels, of varying lengths ~~45 ft or smaller, with a crew of two or three personnel~~. The feed / security vessel will usually be manned overnight; additional work crew will be on site ~~intermittently,~~ for an average of around 8~~6~~ hours per day.~~, but will spread their presence on site over all daylight hours to ensure maximum feeding efficiency by the crepuscular (sunrise and sunset) feeders such as mahimahi~~.

The vessels will work out of Honokohau or Kawaihae Harbors, where ~~it~~ they will be moored either in ~~a~~ commercial ~~fishing~~ slips (~~if one is~~ as available) or will be held overnight on a trailer. There will also be land-based support facilities, including an office, workshop and feed storage area, on land leased from the DOBOR/DLNR, or DOT (for Honokohau or Kawaihae Harbors, respectively).

PRODUCTION

Total annual production from the farm will be around 60~~3~~60 tonnes of ~~fish~~Kona Kampachi™ per year~~, either kampachi (kahala) or mahimahi~~. The standing stock of fish at the farm – the maximum biomass of fish that will be held on the farm at any one time - will be around 200~~99~~ tonnes ~~(218,000 pounds)~~.

The net pens will be stocked every four to eight~~two months~~ weeks. For Kona K~~k~~ampachi™, each net pen will be stocked with ~~around 26~~ up to 80,000 two month old fish, each weighing around ~~1~~0 - 20 grams (0.5 – 0.9~~4~~ oz). ~~Over the 10 months of grow-out, c~~Cumulative mortality over the grow-out period may total 10%. ~~For mahimahi, a higher mortality rate is anticipated (around 20% throughout grow-out) and so a larger stocking of around 160,000 fingerlings per net pen is required.~~

Final size at harvest will range from 0.5 kg (1 lb, for plate-sized fish) to ~~be around 2.25~~around 3 kg (almost ~~6~~5 lbs, for sashimi and fillet fish). ~~, with around 24,000 fish harvested from each cohort (both mahimahi and kampachi) at the end of the tank grow-out.~~

Fish will be harvested from one to three times weekly (depending on market demand and flight schedules for overseas shipments), with an estimated 20 tonnes~~2,300 kg~~ (40~~5~~,000 pounds) of fish harvested each ~~time~~ week, once the farm reaches steady state.

2. EXISTING CONDITIONS ON PARCEL

Ownership : The offshore waters are owned by the State of Hawaii, and is administered by the Department of Land and Natural Resources.

Resources : The deep water and coarse sand substrate supports very little flora or fauna. A survey of activity showed that here was negligible public use of the immediate area (see Appendices to the ~~attached~~ Final EA). Commercial dive charter boats and recreational fishing and diving boats anchor along the reef areas inshore of the site (Unualoha Point and Makako Bay), but the proposed operation will not impede access to these areas. The area is not a significant habitat for birds. There is no historical significance to the site.

Presence of Threatened or Endangered Species : The area lies just inside of the Hawaii Island Humpback Whale National Marine Sanctuary, and is frequented by humpback whales in winter. However, no entanglement risk or other adverse interactions are expected, because of the taut mooring lines and taut mesh on the net pens. Similarly, although green sea turtles and monk seals may traverse the area on rare occasions, no adverse interactions are expected. Other endangered species do not frequent the area.

Constraints : None. The area is part of State Marine Waters, but is not subject to heavy surf action because of the water depth. The project intends to use submersible net pens, wherever practical. ~~Surface pens may be needed for some species, or some stages of~~

~~grow-out.~~ All engineering of net pens and mooring systems will be performed by qualified engineers, with specifications sufficient to withstand 50 year storms.

Existing land uses : There ~~we~~are formerly no existing structures in the proposed lease area. As discussed above, there is some use of the fringing reef area inshore of the lease for diving and fishing, but the proposed use will not impede access to these areas.

Existing Conservation District Use Permits : Kona Blue holds the CDUP and lease for the site; there were formerly none.~~None~~.

Access : The deep water offshore lease area can only be reached by boat or other watercraft. The inshore reef area can also be reached by foot across the lava from NELHA or jeep trails through the airport lands.

Soils : The area of the proposed lease slopes seaward from 200 feet to 220 feet deep. The ocean bottom is covered with a thick layer of coarse sand.

3. PROPOSED LAND USES ON PARCEL

Description of proposed Land Use : The pearl farm ~~will~~ occupies~~y~~ the surface, seafloor and water column of the State marine waters and submerged lands classified in the Resource Subzone per section 13-5-13 (5), and section 13-5-24 R-1 AQUACULTURE.

Site Plan : See Figure 1, attached.

Justification : Marine fish farming is aquaculture, and therefore complies with the requirements for the resource subzone, as detailed in section 13-5-24 R-1 AQUACULTURE.

Relationship to other land uses : The area is directly north of NELHA's research corridor. The lands directly inshore from the proposed lease area are owned by State of Hawaii, and administered by NELHA for commercial aquaculture purposes. Cyanotech Corporation currently operates microalgal culture ponds for growing Spirulina pacifica in this area. Further mauka from Cyanotech's ponds is the runway for the Kona International Airport.

Expected timing : The project ~~could expect to~~ obtained final approval from all cognizant State and Federal agencies for the ~~lease~~project ~~by~~in March, 2004, and began operations in February, 2005. ~~October 1st, 2003. Operations would commence as soon as possible thereafter. A 20 year lease is requested.~~

Monitoring strategies : A long term water quality monitoring program ~~will be instigated~~ is being conducted at the farming company's expense, as part of the NPDES requirements, to track impacts from the farm on water quality and benthic habitat. The specific details of parameters, sites and frequency of sampling ~~will be~~ have been determined in consultation with the State Department of Health Clean Water Branch, as part of the process of obtaining the NPDES permit. Benthic monitoring and monitoring of interactions with marine mammals ~~will~~are

also be conducted according to DAR, NMFS and HIHWNMS requirements. All monthly and quarterly water quality monitoring reports will be made available at a local repository in Kona (the DAR office), and on the Kona Blue web site (www.kona-blue.com) for community review.

Environmental Assessment : A ~~draft~~Final ~~–~~Environmental Assessment wa~~i~~s approved in August, 2003.~~included in the package, and is attached.~~

Historic Preservation concerns : There are no such concerns for the area, as described in the EA.

4. REPORTING SCHEDULE

Time duration of management plan : The management plan shall remain in effect for the full duration of the lease, until amended. ~~A 20 year renewable lease is requested, based on the investment required, and the lead time until the farm reaches commercial production.~~

Annual reporting schedule : The farm will be subject to annual reporting requirements under the Aquaculture License law. A copy of this annual report will be provided to DLNR, along with the reports from the water quality monitoring program, as appropriate.

Annual reporting requirements : The Aquaculture License law requires details on number of protected animals held on the farm. The water quality monitoring program will provide raw data, analysis and interpretation of the germane parameters, and assessment of the extent and impact of any changes in benthic community or substrate beneath the farm